

SEQUENCE LISTING

<110> Skinner, Michael K.

Patton, Jodi L.

<120> A METHOD OF DETERMINING TUMOR CHARACTERISTICS BY
DETERMINING ABNORMAL COPY NUMBER OR EXPRESSION LEVEL OF
LIPID-ASSOCIATED GENES

<130> PATRICK EAGLEMAN: EMBOL-X 252/124

<140>

<141>

<160> 95

<170> PatentIn Ver. 2.0

<210> 1

<211> 2045

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(2045)

<223> The sequence of the cDNA coding for

1-acylglycerol-3-phosphate acyltransferase

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<211> 1554

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1554)

<223> The sequence of the cDNA coding for Aldehyde
dehydrogenase (5 family, member A1)

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<210> 3

<211> 2051

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(2051)

<223> The sequence of the cDNA coding for
Choline/ethanolamine phosphotransferase

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<210> 4

<211> 3758

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(3758)

<223> The sequence of the cDNA coding for Diacylglycerol

kinase, gamma

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<211> 2470

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(2470)

<223> The sequence of the cDNA coding for

Dihydroxyacetone phosphate acyltransferase

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<211> 2757

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(2757)

<223> The sequence of the cDNA coding for EDG-1

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cgagagatgt cttgttttt taaaaagaat agtatttaat aggtttctga cttttgtgga 2700
tcattttgca catagcttta tcaacttttta aacattaata aactgatttt tttaaag 2757

<210> 7

<211> 1217

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1217)

<223> The sequence of the cDNA coding for EDG-2

<400> 7

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acaagaaaat ttgtctcccg tagttctggg gcgtgttcac cacctacaac cacagagctg 120
tcatggctgc catctctact tccatccctg taatttcaca gccccagttc acagccatga 180
atgaaccaca gtgcttctac aacgagtcca ttgccttctt ttataaccga agtgaaagc 240
atcttgccac agaatggaac acagtcagca agctggtgat gggacttggaa atcactgttt 300
gtatcttcat catgttggcc aacctattgg tcatggtggc aatctatgtc aaccggcgct 360
tccattttcc tatttattac ctaatggcta atctggctgc tgcagacttc tttgctgggt 420
tggcctactt ctatctcatg ttcaacacag gaccaatac tcggagactg actgtcagca 480
catggctcct tcgtcagggc ctcattgaca ccagcctgac ggcattctgtg gccaacttac 540
tggctattgc aatcgagagg cacattacgg tttccgcat gcagctccac acacggatga 600
gcaaccggcg gtagtggtg gtcattgtgg tcatctggac tatggccatc gttatgggtg 660

ctataccag tgtgggctgg aactgttatct gtgatattga aaattgttcc aacatggcac 720
ccctctacag tgactcttac ttagtcttct gggccatTTT caacttggtg acctttgtgg 780
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ccacctttag gcagatcctc tgctgccagc gcagtgagaa ccccaccggc cccacagaag 1140
gctcagaccg ctcggcttcc tccctcaacc acaccatctt ggctggagtt cacagcaatg 1200
atcactctgt ggtag 1217

<210> 8

<211> 1137

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1137)

<223> The sequence of the cDNA coding for EDG-3

<400> 8

atggcaactg ccctccggcc gcgctccag ccgggtgcggg ggaacgagac cctgcgggag 60
cattaccagt acgtggggaa gttggcgccc aggctgaagg aggccctccga gggcagcacg 120
ctcaccacccg tgctcttctt ggtcatctgc agcttcatcg tcttggagaa cctgatggtt 180
ttgattgcca tctggaaaaa caataaaattt cacaaccgca tgtactttt cattggcaac 240
ctggctctct gcgacctgct ggccggcatc gcttacaagg tcaacattct gatgtctggc 300
aagaagacgt tcagcctgtc tcccacggtc tggttcctca gggagggcag tatgttcgtg 360

gcccgggg cgtccacctg cagctactg gccatcgcca tcgagcggca cttgacaatg 420
atcaaaatga ggccttacga cgccaacaag aggcaccgcg tcttcctcct gatcgggatg 480
tgctggctca ttgccttcac gctggcgcc ctgcccattc tgggctggaa ctgcctgcac 540
aatctccctg actgctctac catcctgccc ctctactcca agaagtacat tgccttctgc 600
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ctgctgcgga ccgtggatgt tgggtgagc gtgttcatcg cctgctggc cccactcttc 780
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agcagcaaca atagcagcca ctctccgaag gtcaaggaag acctgcccc cacagacccc 1080
tcatcctgca tcatggacaa gaacgcagca cttcagaatg ggatcttctg caactga 1137

<210> 9

<211> 1056

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1056)

<223> The sequence of the cDNA coding for EDG-4

<400> 9

atggtcatca tggccaggctg ctactacaac gagaccatcg gcttcttcta taacaacagt 60
ggcaaagagc tcagctccca ctggcgccccc aaggatgtgg tcgtggtggc actggggctg 120
accgtcagcg tgctggtgct gctgaccaat ctgctggtca tagcagccat cgcctccaac 180

cgccgcttcc accagccat ctactacctg ctcggcaatc tggccgcggc tgacctttc 240
gcgggcgtgg cctaccttt cctcatgttc cacactggtc cccgcacagc ccgactttca 300
cttgagggct ggttcctgctg gcagggcttg ctggacacaa gcctcaactgc gtcggtggcc 360
acactgctgg ccatcgccgt ggagcggcac cgcaagtgtga tggccgtgca gctgcacagc 420
cgccctgcccc gtggccgcgt ggtcatgctc attgtggcg tgtgggtggc tgccctgggc 480
ctggggctgc tgcctgccc a ctcctggcac tgcctctgtg ccctggaccg ctgctcacgc 540
atggcacccc tgctcagccg ctccatttg gccgtctggg ctctgtcgag cctgcttg 600
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ctactgttgg ccgaggccaa ctcactggtc aatgctgctg tgtactcttgc 900
gagatgcgcc gcacccctcg ccgccttctc tgctgcgcgt gcctccgcac gtccacccgc 960
gagtctgtcc actatacatc ctctgcccag ggaggtgcca gcactcgcat catgcttccc 1020
gagaacggcc acccaactgat ggactccacc cttag 1056

<210> 10

<211> 1062

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1062)

<223> The sequence of the cDNA coding for EDG-5

<400> 10

atgggcagct tgtactcgga gtacctgaac cccaaacaagg tccaggaaca ctataattat 60

accaaggaga cgctggaaac gcaggagacg acctccgc aggtggcctc ggccttcata 120
gtcatcctct gttgcgccat tgtggtgaa aacttctgg tgctcattgc ggtggccga 180
aacagcaagt tccactcggc aatgtacctg tttctggca acctggccgc ctccgatcta 240
ctggcaggcg tggccttcgt agccaataçc ttgctctctg gctctgtcac gctgaggctg 300
acgcctgtgc agtggttgc ccgggagggc tctgctcca tcacgctctc ggcctctgtc 360
ttcagcctcc tggccatcgc cattgagcgc cacgtggcca ttgccaaggt caagctgtat 420
ggcagcgcaca agagctgccc catgcttctg ctcatcgggg cctcgtggct catctcgctg 480
gtcctcggtg gcctgcccatt ccttggctgg aactgcctgg gccacctcga ggcctgtcc 540
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ccggggcacc acctcctgccc actccgcagc tccagctccc tggagagggg catgcacatg 1020
cccacgtcac ccacgtttct ggagggcaac acggtggtct ga 1062

<210> 11

<211> 1566

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1566)

<223> The sequence of the cDNA coding for EDG-6

<400> 11

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ccaacagctg gcggccggcg ggcacagccg gctcattgtt ctgcactaca accactcggg 120
ccggctggcc gggcgcgaaa ggccggagga tggcggcctg gggggccctgc gggggctgtc 180
ggtggccgccc agctgcctgg tggtgcgttga gaacttgctg gtgctggcgg ccatcaccag 240
ccacatgcgg tcgcgacgct gggtctacta ttgcctggta aacatcacgc tgagtgaccc 300
gctcacgggc gcggcctacc tggccaaacgt gctgctgtcg gggggccgc cttccgtct 360
ggcgcccccc cagtggttcc tacgggaggg cctgctcttc accgcccctgg ccgcctccac 420
cttcagcctg ctcttcactg caggggagcg ctttgcacc atggtgcggc cggtgccga 480
gagcggggcc accaagacca gccgcgtcta cggcttcata ggccctctgct ggctgctggc 540
cgcgctgctg gggatgctgc ctttgctggg ctggaaactgc ctgtgcgcct ttgaccgctg 600
ctccagcctt ctggccctct actccaagcg ctacatcctc ttctgcctgg tgatcttcgc 660
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cagcctcgcc tgtatggggc gcagggaaacg ggacaggccc ccatggtctt cccgggtggcc 1320
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cccgcttctg tgtgattctg gggaaagtccc ggccctctc tgggcctcag tagggctccc 1500
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aaaaaaa

<210> 12
<211> 1148
<212> DNA
<213> Homo sapiens

<220>
<221> gene
<222> (1)..(1148)
<223> The sequence of the cDNA coding for EDG-7

<400> 12
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gacaaggaca tggacttttt ttataatagg agcaaacactg atactgtcga tgactggaca 120
ggaacaaagc ttgtgattgt tttgtgtgtt gggacgtttt tctgcctgtt tattttttt 180
tctaattctc tggcatcgc ggcagtgatc aaaaacagaa aatttcattt ccccttctac 240
tacctgttgg ctaatttagc tgctgccat ttcttcgctg gaattgccta tgtattcctg 300
atgttaaca caggcccagt ttcaaaaact ttgactgtca accgctgggt tctccgtcag 360
gggcttctgg acagtagctt gactgcttcc ctcaccaact tgctggttat cgccgtggag 420
aggcacatgt caatcatgag gatgcgggtc catagcaacc tgaccaaaaa gagggtgaca 480
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tggaaattgcc tctgcaacat ctctgcctgc tcttcctgg cccccattta cagcaggagt 600
taccttgttt tctggacagt gtccaacctc atggccttcc tcattatgtt tgtgggtac 660
ctgcggatct acgtgtacgt caagagggaa accaacgtct tgtctccgca tacaagtggg 720
tccatcagcc gccggaggac acccatgaag ctaatgaaga cggtgatgac tgtcttaggg 780
gcgtttgtgg tatgctggac cccgggcctg gtgggtctgc tcctcgacgg cctgaactgc 840
aggcagtgtg gcgtgcagca tgtgaaaagg tggttcctgc tgctggcgct gctcaactcc 900
gtcgtgaacc ccatcatctt ctcctacaag gacgaggaca tgtatggcac catgaagaag 960

atgatctgct gcttctctca ggagaaccca gagaggcgtc cctctcgcat cccctccaca 1020
gtcctcagca ggagtgacac aggcagccag tacatagagg atagtattag ccaaggtgca 1080
gtctgcaata aaagcacttc ctaaactctg gatgcctctc ggcccaccca ggtgatgact 1140
gtcttagg 1148

<210> 13

<211> 1606

<212> DNA

<213> *Homo sapiens*

<220>

<221> gene

<222> (1)..(1606)

<223> The sequence of the cDNA coding for

Glycerol-3-phosphate dehydrogenase

<400> 13

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gctgccgggg ctctccgcct ccccccacct gtatgaggct gggctctgggg aacctgtgct 120
cagcattcca cccccctggag cttgggcttg gtcttccctg cgggtccctg cgctgacatt 180
caggcggggga gccaggaggc ctggcgcgcc tccagagccc gccgggggag ccgggcgagg 240
gttctgggct ctgacggcgg ggtcgccagg tcgcccgcct cctggacacg tctgttaggcc 300
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cgagaagtgc tcaggctaag aaatggcatt tcaaaaggca gtgaaaggga cgattcttgt 420
tggaggaggt gctcttgcaa ctgttttagg actttctcag tttgctcatt acagaaggaa 480
acaaatgaac ctggcctatg ttaaagcagc agactgcatt tcagaaccag ttaacaggga 540
gcctccctcc agagaagctc agctactgac tttgcaaaat acatctgaat ttgatatacct 600
tqttattqga ggaggagcaa caggaagtgg ctgtgcgccta gatgctgtca ccagaggact 660

aaaaacagcc cttgtagaaa gagatgattt ctcatcaggg accagcagca gaagcactaa 720
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cactactgat actccaaactg atgttacaca ccatccaatt cttcagaag aagatata 1500
cttcattttg aatgaagtgc gtaattacct gagttgtgat gttgaagtga gaagaggg 1560
tgtcctggca gcatggagtg gaatccgtcc tcttggataa gacccc 1606

<210> 14

<211> 2417

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(2417)

<223> The sequence of the cDNA coding for

Lyosphospholipase I

<400> 14

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cgctgcccgc catcggtccc gccgccccggaa aggccaccgc tgccgtgatt ttcctgcatt 120
gattgggaga tactgggcac ggatgggcag aagccttgc aggtatcaga agttcacata 180
tcaaataatctt ctgcccgcatt ggcctgttac attaaatatg aacgtggcta 240
tgccttcattt gtttgcattt attgggctt caccagattt acaggaggat gaatctgggaa 300
ttaaacaggc agcagaaaaat ataaaagctt tgattgatca agaagtgaag aatggcattt 360
cttctaacag aattattttggg ggagggtttt ctcaggagg agctttatct ttatatactg 420
cccttaccac acagcagaaaa ctggcagggtg tcactgcact cagttgctgg cttccactt 480
gggcttcctt tccacagggt cctatcggtg gtgctaatacg agatatttctt attctccagt 540
gccacggggaa ttgtgaccct ttgggtcccc ttgtgtttgg ttctcttacg gtggaaaaaac 600
taaaaacatt ggtgaatcca gccaatgtga cctttaaaac ctatgaaggt atgatgcaca 660
gttcgtgtca acaggaaatg atggatgtca agcaattcat tgataaactc ctaccccaa 720
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gcaaatacat gcccataaca cagatcaaataatctt catgagaaat ttatgtatctt 900
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agatttttta ttacatcattt tgaaaattttt cagttatgtt aatgaaaaattt tgttcaggta 1080
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cttatttcga attactgttac cttatccaaa tttacaccta gctatttagga tcttcaaccc 1620

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attgtgctgt aacatggaa agtgtaaatg ttttcatttgg tttctatcaa tgtgaaataa 2400
aatttaatttcc tgaaaaaa 2417

<210> 15
<211> 1192
<212> DNA
<213> Homo sapiens

<220>
<221> gene
<222> (1)..(1192)
<223> The sequence of the cDNA coding for Human
Lysophospholipase Homolog

<400> 15
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ttggggccgc ccagatgagg gaacagcccg atttgcctgg ttctgattct ccaggctgtc 120
gtggttgtgg aatgcaaacg ccagcacata atggaaacag gacctgaaga cccttccagc 180
atgccagagg aaagttcccc cagggcgacc ccgcagagca ttccctacca ggacccct 240
cacctggtca atgcagacgg acagtacctc ttctgcaggt actggaaacc cacaggcaca 300
cccaaggccc tcatcttgcgt gtcggatggc gcccggagac acagtggccg ctatgaagag 360
ctggctcgga tgctgatggg gctggacctg ctgggtttcg cccacgacca tggtggccac 420
ggacagagcg aaggggagag gatggtagtg tctgacttcc acgtttcgt cagggatgtg 480
ttgcagcatg tggattccat gcagaaagac taccctggc ttcctgtctt cttctggc 540
caactccatgg gaggcgccat cgccatcctc acggccgcag agaggccggg ccacttcgac 600
ggcatggtac tcatttcgac tctgggttctt gccaatcctg aatctgcaac aactttcaag 660
gtccttgctg cgaaagtgc caaccttgcgt ctgccaaact tgccttcgg gcccattcgac 720
tccagcgtgc tctctcgaa taagacagag gtcgacattt ataactcaga cccctgatc 780
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tccgtcttcc atgaaataaa catgtgggtc tctcaaagga cagccacggc aggaactgcg 1080
tccccaccct gaatgcattt gcccggatggc ggctcatggc ctggggatg caggcagggg 1140
aaggcagag atggcttctc agatatggct tgcaaaaaaaa aaaaaaaaaa aa 1192

<210> 16

<211> 2333

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(2333)

<223> The sequence of the cDNA coding for
N-acylsphingosine amidohydrolase

<400> 16

ggcacgaggc tagagcgatg ccggggccgga gttgcgtcgc ctttagtcctc ctggctgccc 60
ccgtcagctg tgccgtcgcg cagcacgcgc cgccgtggac agaggactgc agaaaatcaa 120
cctatcctcc ttcaggacca acgtacagag gtgcagttcc atggtacacc ataaatcttg 180
acttaccacc ctacaaaaga tggcatgaat tggatgttga caaggcacca atgctaaagg 240
ttatagtgaa ttctctgaag aatatgataa atacattcgt gccaagtggaa aaagttatgc 300
aggtggtgga tgaaaaatttgc cctggcctac ttggcaactt tcctggccct tttgaagagg 360
aatgaaggg tattgcccgt gttactgata taccttttagg agagattatt tcattcaata 420
tttttatga attatttacc atttgtactt caatagtagc agaagacaaa aaaggtcatc 480
taatacatgg gagaaacatg gattttggag tatttcttgg gtggAACATA aataatgata 540
cctgggtcat aactgagcaa ctaaaacctt taacagtgaa tttggatttc caaagaaaaca 600
acaaaactgt cttcaaggct tcaagcttgc ctggctatgt gggcatgttta acaggattca 660
aaccaggact gttcagtctt acactgaatg aacgtttcag tataaatgggt gtttatctgg 720
gtattctaga atggattctg ggaaagaaaatg atgccatgtg gatagggttc ctcactagaa 780
cagttcttggaa aaatagcaca agttatgaaatg aagccaaagaa tttattgacc aagaccaaga 840
tattggcccc agcctacttt atcctggag gcaaccagtc tggggaaaggt tgggtgttta 900
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cgccctgcaaa gatgtgtctg aaccgcacca gccaagagaa tatctcattt gaaaccatgt 1080
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ataattgaag tgttccctt ttcataatta ctctacttcc cagtaaccct aaggaagttg 1920
ctaacttaaa aaactgcac ccacgttctg ttaatttagt aaataaaacaa gtcaaagact 1980
tgtggaaaat aggaagtgaa cccatatttt aaattctcat aagtagcatt gatgtaataa 2040
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ttgttaacct ttctaacctt cacgattaac tgtgaaatgt acgtcatttgc tgcaagaccg 2220
tttgcact tcattttgtt taatcacagt tgtgttcctg acactcaata aacagtcaact 2280
ggaaagagtg ccagtcagca gtcatgcacg ctgataaaaa aaaaaaaaaaaa aaa 2333

<210> 17

<211> 1016

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1016)

<223> The sequence of the cDNA coding for Phospholipase

A2

<400> 17

atggatacc a atgttccgac tggagacggg gagcccgca gacccgggtc tccagggct 60
gccccaaaggaa gttgctcatg ggagcagacc cctagacgag gatttggggc caggccaaag 120
agaaccccaag agatgaaagg cccctccca ctggcttggt tcctggcttgc tagtgtgcct 180
gctgtgcaag gaggcttgc ggacctaaaa tcaatgatcg agaagggtgac aggaaagaac 240
gccctgacaa actacggctt ctacggctgt tactgcggct gggggggccg aggaaccccc 300
aaggatggca ccgattggtg ctgttggcg catgaccact gctatggcg gctggaggag 360
aagggctgca acattcgac acagtcc tac aaatacagat tcgcgtgggg cgtggtcacc 420
tgcgagcccg ggcccttctg ccatgtgaac ctctgtgcct gtgaccggaa gctcgtctac 480
tgccctcaaga gaaacctacg gagctacaac ccacagtacc aatactttcc caacatcctc 540
tgctccttagg cctccccagc gagctcctcc cagaccaaga cttttgttct gttttctac 600
aacacagagt actgactctg cctggttcct gagagaggct cctaagtcac agacccctc 660
ctttctcgaa gcttggcgga cccccagggc cacactgtac cctccagcga gtcccaggag 720
agtgactctg gtcataggac ttggtagggt cccagggtcc ctggcctcc acttctgagg 780
gcagccccctc tggtgccaaag agctctcctc caactcaggg ttggctgtgt ctctttctt 840
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gcttctcgaa tcagattatc atcaccacca ccctccagag aattttacgc aagaagagcc 960
aaattgactc tctaaatctg gtgtatgggt attaaataaa attcattctc aaggct 1016

<210> 18

<211> 3609

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(3609)

<223> The sequence of the cDNA coding for Phospholipase

D1 (phosphatidylcholine specific)

<400> 18

ggcacgagga gccctgagag tccgcccaca acgcgcaggt gctagcggcc cttcgccct 60
gcagcccctt tgctttact ctgtccaaag ttaacatgtc actgaaaaac gagccacggg 120
taaatacctc tgcactgcag aaaattgctg ctgacatgag taatatcata gaaaatctgg 180
acacgcggga actccacttt gagggagagg aggtagacta cgacgtgtct cccagcgatc 240
ccaagataca agaagtgtat atcccttct ctgctattta taacactcaa ggatttaagg 300
agcctaatac acagacgtat ctctccggct gtccaataaa agcacaagtt ctggaagtgg 360
aacgcttcac atctacaaca agggtaccaa gtattaatct ttacactatt gaattaacac 420
atgggaatt taaatggcaa gttaagagga aattcaagca tttcaagaa tttcacagag 480
agctgctcaa gtacaaagcc tttatccgca tccccattcc cactagaaga cacacgttta 540
ggaggcaaaa cgtcagagag gagcctcgag agatgcccag tttgccccgt tcatctgaaa 600
acatgataag agaagaacaa ttccctggta gaagaaaaca actggaagat tacttgacaa 660
agatactaaa aatgcccattg tatagaaact atcatgccac aacagagttt cttgatataa 720
gccagctgtc tttcatccat gatttggac caaaggcat agaaggtatg ataatgaaaa 780
gatctggagg acacagaata ccaggcttga attgctgtgg tcagggaga gctgctaca 840
gatggtaaaa aagatggta atagtgaaag attccctttt attgtatatg aaaccagaca 900
gccccgtccat tgccttcgtc ctgctggtag acaaagaatt caaaattaag gtggggaga 960
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atgctttac taaatggat gttaatgcca aaggatattt tgaagatgtg gcaaatgcaa 1200
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tcattgacca atcggtggcc tttgtggag ggattgacct ggcctatgga aggtggacg 1560

acaatgagca cagactcaca gacgtggca gtgtgaagcg ggtcacttca ggaccgtctc 1620
tgggtccct cccacctgcc gcaatggagt ctatgaaatc cttaaagactc aaagataaaa 1680
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gtttacagac aggtgtgggaa gagctgcatg gggaaaccag attctggcat ggaaaggact 2040
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ccacactgca cacagtgact tcctggggat gtcatalogcca aagccaggcc tgacgcattc 3420
tcgtatccaa cccaaggacc ttttggaaatg actggggagg gctgcagtca cattgatgta 3480
aggactgtaa acatcagcaa gactttataa ttccttctgc ctaacttgta aaaagggggc 3540
tgcattcttg ttggtagcat gtactctgtt gagtaaaaca catattcaaa ttccgctcgt 3600
gccgaattc 3609

<210> 19

<211> 2893

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1) .. (2893)

<223> The sequence of the cDNA coding for Phospholipase

D1 glycosylphosphatidylinositol specific

<400> 19

cgtcattaga ggagccggtg ggaaatgaga gcatgtctgc tttcaggttg tggccggcc 60
tgctgatgat cgtgatggct tctctgtcc atagaggttc atcgtgtggc cttcaacgc 120
acatagaaat cggacacaga gctctggagt ttcttcatct tcacaatggg catgttaact 180
acaaagagct gttactagaa caccaggatg catatcaggc tggaccgtg tttcctgatt 240
gtttttaccc tagcctctgc aaaggaggaa aattccatga tgtgtctgag agcactcact 300
ggactccgtt tcttaacgca agcggttatt atatccgaga gaactatccc cttccctggg 360
agaaggacac agagaaaactg gtagcttct tggatggaaat tacttctcat atggtagcag 420
atgtcagctg gcatagtctg ggcattgaac aaggattcct taggaccatg ggagctattg 480

atttcacgg ctcctattct gaggctcatt cagctggta tttggagga gatgtgtga 540
gccagttga atttaatttt aattaccttgc acgacgctg gtatgtgccatgtcaaaagatc 600
tgctggaaat ttatgagaaa ctctatggtc gagaagtcata cactgaaaat gtaattgttg 660
attgttcaca tatccagttc ttagaaatgt atggtagat gctagctgtt tccaagttat 720
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gaggactgga tgatatggcg tttggtcca ctaatatttgc ccatctaacg agcttcatgt 840
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gccagcaaaa ccacacccag ggctcgaaaaa tgcaaaaaa tgatttcac agaaatttga 960
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gtgacatgac tggcaaatgc aaatcgtgga tgactccatg tccagaagaa aaggccaaat 2400
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ttcctttgca tctaaacctt tcttctttcc gaacttttg cctatagtca gacctgctgt 2880
accaccttatt tcc 2893

<210> 20

<211> 1362

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1362)

<223> The sequence of the cDNA coding for Phosphatidic

Acid Phosphatase type 2B

<400> 20

ggcgcagctc tgcaaaagtt tctgctcggt atctggctct cttcccttg gacttttagaa 60
cgattttaggg ttgacagagg aaagcagagg cgccgcaggag gagcagaaaa caccaccc 120

<210> 21

<211> 1043

<212> DNA

<213> *Homo sapiens*

<220>

<221> gene

<222> (1)..(1043)

<223> The sequence of the cDNA coding for Phosphatidic Acid Phosphatase type 2a

<400> 21

cccgccgg gctcgagaat caagggcctc ggccgccgtc ccgcagctca gtccatcgcc 60
cttgcggggc agcccgggca gagaccatgt ttgacaagac gcggctgccc tacgtggccc 120
tcgatgtgct ctgcgtgttgc ctggctggat tgcctttgc aattttact tcaaggcata 180
ttacttcaag gcataaccccc ttccaacgag gagtattctg taatgatgag tccatcaagt 240
acccttacaa agaagacacc ataccttatg cgttatttagg tggaaaatc attccattca 300
gtattatcg tattattctt ggagaaaccc tgtctgttta ctgtaacctt ttgcactcaa 360
atccctttat caggaataac tacatagcca ctatttacaa agccattgga accttttat 420
ttgggtcagc tgctagtcag tccctgactg acattgcca gtattcaata ggcagactgc 480
ggcctcaacctt ctggatgtt tgtgatccag attggtaaaa aatcaactgc agcgatggtt 540
acattgaata ctacatatgt cgagggatg cagaaagagt taaggaaggc aggttgcct 600
tctattcagg ccactcttcg tttccatgt actgcattgt gtttggca ctttatcttc 660
aagccaggat gaagggagac tggcaagac tcttacgccc cacactgcaa tttggcttg 720
ttgcgtatc catttatgtg ggccttcgc gagttctga ttataaacac cactggagcg 780
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cgatttctt caaagaaaga acttcttta aagaaagaaa agaggaggac tctcatacaa 900
ctctgcatttca aacaccaaca actggaaatc actatccgag caatcaccag cttgaaagg 960
cagcagggtg cccaggtgaa gctggcctgt tttctaaagg aaaatgatttgc ccacaaggca 1020
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1043

<210> 22

<211> 5397

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(5397)

<223> The sequence of the cDNA coding for

Phosphatidylinositol-3-Kinase (class 2, gamma
polypeptide)

<400> 22

gaattcggca cgagcacttc cttctcggt agattatctg aaactgttgt cggttcttga 60
gatgatacta ccaccgaatg tctgtgttcc attgtcttagt ccaacctgtta ttgtggatat 120
ctacaacgtt ccggcaatag ttttgcaggt gcatcacatt tttgtttttt ttttgggagg 180
aaaagggagg gcacggcagc caggcttcat attcctacaa gtgcattgtt caagattact 240
gtacttacag tgggttccaac atcttctcat aaaagggaa agcttcatacg cctcaaccat 300
gaaggaaacc agtcgcatacg ggcattggagc tggagaacta taaacagccc gtgggtgttga 360
gagaggacaa ctgcccgaagg cgccggagga tgaagccgcg cagtgtgcc agcctgtcct 420
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<210> 23

<211> 3424

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(3424)

<223> The sequence of the cDNA coding for

Phosphatidylinositol-3-kinase (catalytic, alpha
polypeptide)

<400> 23

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caggacttcc gaagaaatat tcttaatgtt tgtaaagaag ctgtggatct tagggatctt 480
aattcacctc atagtagagc aatgtatgtc tatccgccac atgtagaatc ttcaccagag 540
ctgccaaagc acatataataa taaattggat agaggccaaa taatagtggt gatttggta 600
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aaaaa 3424

<210> 24

<211> 1201

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1201)

<223> The sequence of the cDNA coding for Prostate

Differentiation Factor PLAB

<400> 24

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atggctctca gatgctcctg gtgttgctgg tgctctcggt gctgccgcat gggggcgccc 120
tgtctctggc cgaggcgagc cgcgcaagtt tcccgggacc ctcagagttt cacaccgaag 180
actccagatt ccgagagttt cgaaaacgct acgaggacct gctaaccagg ctgcgggcca 240
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gctgccgtct gcacacggtc cgcgcgtcgc tggaagacct gggctgggcc gattgggtgc 720
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aagtctgtta tttattatta atttattggg gtgacccttct tggggactcg ggggctggc 1140
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c 1201

<210> 25
<211> 1269
<212> DNA
<213> Homo sapiens

<220>
<221> gene
<222> (1)..(1269)
<223> The sequence of the cDNA coding for Phosphatidic
Acid Phosphatase type 2c

<400> 25
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cttcgtgctg ctcgacgtgc tgtgcttact ggtcgccctcc ctgccttgc ctatcctgac 120
gctggtaac gccccgtaca agcgaggatt ttactgcggg gatgactcca tccggtaccc 180
ctaccgtcca gataccatca cccacgggtc catggctggg gtcaccatca cggccaccgt 240
catccttgc tcggccgggg aagcctacct ggtgtacaca gaccggctct attctcgctc 300

ggacttcaac aactacgtgg ctgctgtata caaggtgctg gggaccttcc tgtttggggc 360
tgccgtgagc cagtctctga cagacctggc caagtacatg attggcgctc tgaggcccaa 420
cttcctagcc gtctgcgacc ccgactggag ccgggtcaac tgctcggtct atgtgcagct 480
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aaaaaaaaaa 1269

1269

<210> 26

<211> 1286

<212> DNA

<213> *Homo sapiens*

<220>

<221> gene

<222> (1) .. (1286)

<223> The sequence of the cDNA coding for Phosphocholine

cytidyltransferase

<400> 26

cgaccggacc gggctcgaaa gacgtgagt tgcagttaaa agaagatgga tgcacagtgt 60
tcagccaagg tcaatgcaag gaagaggaga aaagaggcgc ccggacccaa cggggcaaca 120
gaagaagatg gggttcccttc caaagtgcag cgctgtgcag tgggcttacg gcaaccagct 180
ccttttctg atgaaattga agttgacttt agtaagccct atgtcagggt aactatggaa 240
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1286

<210> 27

<211> 1856

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1856)

<223> The sequence of the cDNA coding for Phosphate
cytidylyltransferase 2 (ethanolamine specific)

<400> 27

attgcggcg gcggcgttcg gagtcgcccgg gagctgccag gctgtcccgcg ccggccgctgc 60
ggggccatga tccggaacgg gcgcggggct gcaggcgccg cagagcagcc gggcccgcccc 120
ggcaggcgcg ccgtgagggt gtggtgcgat ggctgctatg acatggtgca ttacggccac 180
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tccgacccat accaggagcc caagagaagg ggcacatcc gtcagattga cagtggcagc 1080
aacctcacca cagacccat cgtccagcgg atcatcacca acaggttgaa gtatgaggcg 1140

cgaaaccaga agaaggaagc caaggagctg gccttcctgg aggctgccag gcagcaggcg 1200
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caacacggtg tcctgccacc cagcgcctgg ctccaggaaa acacgcttgc ctcccttccc 1740
ggcagcttcg ccactctcct tatggactct gttctgtttg tacatggctg acggaaatct 1800
cttggtaca accgaataaa gcctggtgcc agtgctgcgc ggggctccca gccaat 1856

<210> 28

<211> 3160

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(3160)

<223> The sequence of the cDNA coding for Phosphatase

and Tenson Homolog (PTEN)

<400> 28

cctccccctcg cccggcgcgg tcccgtccgc ctctcgctcg cctcccgctt cccctcggtc 60
ttcccgaggcg cccgggctcc cggcgcggcg gcggaggggg cgggcaggcc ggcggggcggt 120
gatgtggcag gactctttat gcgctgcggc aggatacgcg ctcggcgctg ggacgcgact 180

gcgctcagg ctctccctc ggaagctgca gccatgatgg aagtttgaga gttgagccgc 240
tgtgaggcga ggccgggctc aggcgaggga gatgagagac ggcggcggcc gcggcccgga 300
gccccctcta gcgcctgtga gcagccgcgg gggcagcgcc ctcggggagc cggccggcct 360
gcggcggcgg cagcggcggc gtttctcgcc tcctttcgat cttttctaacc cgtcagcc 420
cttcctcgcc ttctcctgaa agggaaaggta gaagccgtgg gctcggcgg gagccggctg 480
aggcgccggc gccggcggcgg cggcacctcc cgctcctgga gcggggggga gaagccggcgg 540
cgccggcggc cgcggcggc gcaagctccag ggaggggtc tgagtgcct gtcaccattt 600
ccagggctgg gaacgcccga gagttggtct ctcccttct actgcctcca acacggcggc 660
ggcggcggc gcacatccag ggaccgggc cggtttaaa cctccgtcc gccggccggc 720
caccccccgt ggcccgggct ccggaggccg ccggcggagg cagccgttgc gaggattatt 780
cgtcttctcc ccattccgct gccggccgtg ccaggctct ggctgctgag gagaagcagg 840
cccagtcgt gcaaccatcc agcagccgc gcagcagccaa ttacccggct gcgggtccaga 900
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gatttcctgc agaaagactt gaaggcgtat acaggaacaa tattgatgat gtagtaaggt 1200
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attatagata ttctgacacc actgactctg atccagagaa tgaacctttt gatgaagatc 2220
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gctaaaggaa gtgaatctgt attggggtag aggaatgaac cttctgcaac atcttaagat 3000
ccacaaatga agggatataa aaataatgtc ataggtaa aacacagcaa caatgactta 3060
accatataaa tgtggaggct atcaacaaag aatggcttg aaacattata aaaattgaca 3120
atgatttattt aaatatgttt tctcaattgt aaaaaaaaaaa 3160

<210> 29

<211> 1707

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1707)

<223> The sequence of the cDNA coding for

Sphingosine-1-phosphate lyase 1

<400> 29

atgcctagca cagacccctct gatgttgaag gcctttgagc cctacttaga gattttggaa 60
gtatactcca caaaagccaa gaattatgta aatggacatt gcaccaagta tgagccctgg 120
cagctaattg catggagtgt cgtgtggacc ctgctgatag tctggggata tgagttgtc 180
ttccagccag agagttttagt gtcaagggtt aaaaagaaat gtttaagct caccaggaag 240
atgcccatta ttggtcgtaa gattcaagac aagttgaaca agaccaagga tgatattagc 300
aagaacatgt cattcctgaa agtggacaaa gagtatgtga aagctttacc ctcccagggt 360
ctgagctcat ctgctgtttt ggagaaaactt aaggagtaca gctctatgga cgccttctgg 420
caagagggga gaggcctctgg aacagtgtac agtggggagg agaagctcac tgagctcctt 480
gtgaaggcatt atggagattt tgcattggagt aacccctgc atccagatat cttcccagga 540
ctacgcaaga tagaggcaga aattgtgagg atagcttggt ccctgttcaa tggggacca 600
gattcgtgtg gatgtgtgac ttctggggga acagaaagca tactcatggc ctgcaaagca 660
tatcgggatc tggccttga gaaggggatc aaaactccag aaattgtggc tccccaaagt 720
gcccatgctg catttaacaa agcagccagt tactttgggaa tgaagattgt gcgggtcccc 780
ttgacgaaga tcatggaggt ggatgtgagg gcaatgagaa gagctatctc caggaacact 840
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ttcctcatcg tctttatgga gaaagcagga tacccactgg agcaccctt tgatttccgg 1020
tgaaagggtg taaccagcat ttcatgtgac acccataagt atggctatgc cccaaaaggc 1080
tcatcattgg tggctgtatag tgacaagaag tacaggaact atcagttctt cgtcgataca 1140
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aaacagatca tcaaaaactgc tcgcttcctc aagtcagaac tggaaaatat caaaggcatc 1320
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taccgactat caaacctgat gactgctaag gggtggaact tgaaccagtt gcagttccca 1440
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ctaaaggaca ttcgagaatc tgtcaactcaa atcatgaaga atcctaaagc gaagaccaca 1560
ggaatgggtg ccatctatgg catggcccaag acaactgttg acaggaatat ggttgcagaa 1620
ttgtcctcag tcttcttggc cagcttgtac agcaccgaca ctgtcaccca gggcagccag 1680
atgaatggtt ctccaaaacc ccactga 1707

<210> 30

<211> 1879

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(1879)

<223> The sequence of the cDNA coding for Sphingomyelin
phosphodiesterase 1

<400> 30

cctgccgtgt gccaatccat tgtccacctc tttgaggatg acatggtgga ggtgtggaga 60
cgctcagtgc tgagccatc tgaggcctgt ggcctgctcc tgggctccac ctgtggcac 120
tggacattt tctcatcttg gaacatctct ttgcctactg tgccgaagcc gccccccaaa 180
ccccctagcc ccccagcccc aggtgccccct gtcagccgca tcctcttcct cactgacctg 240
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cgccgggggtt ctggcctgcc gccccatcc cggccaggtg ccggatactg gggcgaatac 360
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ggcccttttgc atatgggtta ctggacagga gacatccccg cacatgtatgt ctggcaccag 480
actcgtcagg accaactgcg ggccctgacc accgtcacag cacttgtgag gaagttcctg 540
ggcccaagtgc cagtgtaccc tgctgtgggt aaccatgaaa gcatacctgt caatagcttc 600
cctcccccttc tcattgaggg caaccactcc tcccgctggc tctatgaagc gatggccaag 660
gcttgggagc cctggctgcc tgccgaagcc ctgcgcaccc tcagaattgg ggggttctat 720
gctcttccc catacccccgg tctccgcctc atctctctca atatgaattt ttgttccgt 780
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aacaccctgg ctgctcagtt ctggccac actcatgtgg atgaatttga ggtcttctat 1020
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tcacagccat ggagtagagg cctaagttga cactgccctg ggcagacaag acaggagctg 1800
tcgccccagg cctgtgctgc ccagccagga accctgtact gctgctgcga cctgatgctg 1860
ccagtctgtt aaaataaaag 1879

<210> 31

<211> 3553

<212> DNA

<213> Homo sapiens

<220>

<221> gene

<222> (1)..(3553)

<223> The sequence of the cDNA coding for Phospholipase

C beta 3 (phosphatidylinositol specific)

<400> 31

gaagcgggtg gagactgcgc tggaaatcctg tggcctcaaa ttcaaccgga gtgagtccat 60
ccggcctgat gagtttcct tggaaatctt tgagcggttc ctgaacaagc tgtgtctgcg 120
gccggacatt gacaagatcc tgctggagat aggcgccaag ggcaagccat acctgacgct 180
ggagcagctc atggacttca tcaaccagaa gcaacgcgac ccgagactca acgaagtgct 240
gtacccgccc ctgcggccct cccaggccccg gctgctcatc gaaaagtatg agcccaacca 300
gcagtttctg gagcgagacc agatgtccat ggaggcctt agccgctacc tgggaggcga 360
ggagaatggc atcctgcccc tggaaagccct ggatctgagc acggacatga cccagccact 420
gagtgcctac ttcatcaact cctcgcataa cacctatctc actgcggggc agctggctgg 480
gacctcgctcg gtggagatgt accgcccaggc actactatgg ggctgccgct gcgtggagct 540
ggacgtgtgg aagggacggc cgcctgagga ggaacccttc attaccacg gttcaccat 600
gaccacagag gtgcctctgc gcgacgtgct ggaggccatt gccgagactg cttcaagac 660
ctcgccctac cccgtcatcc ttccttcga gaaccatgtg gactcggcaa agcaacaggc 720
aaagatggct gagtactgcc gctccatctt tggagacgctg ctactcatcg agcctctgga 780
caagtaccccg ctggccccag gcgttccctt gcccagcccc caggacactga tggggccgtat 840
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tctttggga tttttttac atgaataaaa gtggatttca gggaaaaaaaa aaaaaaaaaa 3540
aaaaaaaaaaa aaa 3553

<210> 32

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 32

cgactttgcc tttccatgg ctc

23

<210> 33

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 33

ccttttgtgt ttcatccttc ctctcc

26

<210> 34

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 34

aaaggagaaa gtgaaagatg tggagg

26

<210> 35

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
reverse primer

<400> 35

ggacagaaag ggaggacagg aaag

24

<210> 36

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
forward primer

<400> 36

ccccacttca aactctttca ccc

23

<210> 37

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
reverse primer

<400> 37

gccatttcac tgtcacgctt tc

22

<210> 38

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 38

gctctgccaa gacattgact cc

22

<210> 39

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 39

atcatctctt ccctctgcgt cc

22

<210> 40

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 40

cctacgtcac tacactagag accc

24

<210> 41

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 41

gccaaaactg tctgcatact ccc

23

<210> 42

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
forward primer

<400> 42

aactgctcg tctatgtgca gc

22

<210> 43

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
reverse primer

<400> 43

ccaagaacac catgcagtac atcc

24

<210> 44

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
forward primer

<400> 44

gctcattcaa aagaccgaca ccg

23

<210> 45

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 45

acacagttcc atcagaccag cc

22

<210> 46

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 46

cgtctactgc ctcaagagaa acc

23

<210> 47

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 47

gtccttatgac cagagtcact ctcc

24

<210> 48

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 48

aggaagagga ggaacagaca gac

23

<210> 49

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 49

agcagcctca aaggacttga ac

22

<210> 50

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 50

aacctgctgc tgatagacca cc

22

<210> 51

<211> 22

<212> DNA

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<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 51

tctctccact gctgcctgaa ac

22

<210> 52

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 52

gtaagcacca gccacaaaaaa cc

22

<210> 53

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 53

ctaacgagcc attcccaata ccc

23

<210> 54

<211> 22

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 54

tggattggga gatactgggc ac

22

<210> 55

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 55

ccaaacatca gggaaaccaa agg

23

<210> 56

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
forward primer

<400> 56

cctgttcttc aacatgggcc ag

22

<210> 57

<211> 25

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Miscellaneous
reverse primer

<400> 57

cctctcaacc acctcctcaa tcttc

25

<210> 58

<211> 26

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Miscellaneous
forward primer

<400> 58

tcttcttccc ctaacatcac catctc

26

<210> 59

<211> 22

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 59

tgcatttgcc agtcatgtca cc

22

<210> 60

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 60

aaaccctctt ccttgctcc cctc

24

<210> 61

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 61

atgtctgctt cttcccccttg tgtc

24

<210> 62

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

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tcaacaacaa cccqaggagg ag

22

<210> 63

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
reverse primer

<400> 63

gatggcacag ccaaagagga ag

22

<210> 64

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
forward primer

<400> 64

acttccgcct cttcctgcta atc

23

<210> 65

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
reverse primer

<400> 65

cctccaaacc atcttcatct tccc

24

<210> 66

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 66

atttcacagc cccagttcac agcc

24

<210> 67

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 67

tgaccacaat gaccaccact accc

24

<210> 68

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 68

agcattacca gtacgtgggg aag

23

<210> 69

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 69

aacatactgc cctccctgag gaac

24

<210> 70

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
forward primer

<400> 70

taggctgtga gtcctgcaat gtcc

24

<210> 71

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
reverse primer

<400> 71

tcagcatctc ggcaagagta cac

23

<210> 72

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
forward primer

<400> 72

aaccccaaca aggtccagga acac

24

<210> 73

<211> 23

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 73

tttccaccac aatggcgcaa cag

23

<210> 74

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 74

aagttgcagt cttgcgtgtg

20

<210> 75

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 75

ggtggttacc tccttggtcca

20

<210> 76

<211> 22

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 76

cttgactgct tccctcacca ac

22

<210> 77

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 77

cttttcacat gctgcacgcc

20

<210> 78

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 78

aggtggatgt gagggcaatg agaag

25

<210> 79

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 79

cgggcgtgta gtaatgtgat gcag

24

<210> 80

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 80

gcctcctctt cgtctttctt aacc

24

<210> 81

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 81

catcatcttg tgaaacaaca gtgcc

25

<210> 82

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
forward primer

<400> 82

tcaaggcata cccccttcca ac

22

<210> 83

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
reverse primer

<400> 83

agtccagtc aacacatcgct cc

22

<210> 84

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
forward primer

<400> 84

tctatgctct ttccccatac ccc

23

<210> 85

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
reverse primer

<400> 85

gcgatataacc aggttgtgcc ag

22

<210> 86

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
forward primer

<400> 86

gtgccaagtg gaaaagttat gcag

24

<210> 87

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 87

tgtcaacaga tggacgaaga caag

24

<210> 88

<211> 23

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 88

ccccatttat cagctccatt gcc

23

<210> 89

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 89

catccctct tctcacttca acatc

25

<210> 90

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 90

ccaaacctact gcaaccttctg cc

22

<210> 91

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
reverse primer

<400> 91

caaccccatc acactccaaac tc

22

<210> 92

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
forward primer

<400> 92

gctctgccaa gacattgact cc

22

<210> 93

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous
reverse primer

<400> 93

atcatctctt ccctctgcgt cc

22

<210> 94

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

forward primer

<400> 94

gttagccaag agccaggaca ag

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<210> 95

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Miscellaneous

reverse primer

<400> 95

gcaagccata tctgagaagc catc

24